CLAIMS

What is claimed is:

1. A pin for use in a connector of a plasma arc apparatus, the pin comprising:

a cylindrical portion disposed at a distal end of the pin;

an o-ring groove disposed around the cylindrical portion; and

an o-ring removal slot adjoining the o-ring groove,

wherein the o-ring removal slot provides access for removal of an o-ring disposed within the o-ring groove.

2. The pin of Claim 1, wherein the o-ring groove is recessed within a housing of the connector.

3. The pin of Claim 2, wherein the housing is a plug housing connected to a torch lead of the plasma arc cutting apparatus.

4. The pin of Claim 1, wherein the o-ring removal slot is approximately perpendicular to the o-ring groove.

5. The pin of Claim 1, wherein the o-ring removal slot extends between the distal end of the pin and the o-ring groove.

6. The pin of Claim 1, wherein the o-ring removal slot further comprise chamfered edges.

7. The pin of Claim 1 further comprising a plurality of o-ring removal slots.

8. The pin of Claim 1, wherein the pin is a negative lead gas carrying pin.

9. The pin of Claim 1, wherein the pin comprises a brass material.

10. A negative lead gas carrying pin for use in a connector of a plasma arc apparatus, the negative lead gas carrying pin comprising:

a cylindrical portion disposed at a distal end of the negative lead gas carrying pin;

an o-ring groove disposed around the cylindrical portion; and

an o-ring removal slot adjoining the o-ring groove,

wherein the o-ring removal slot provides access for removal of an o-ring disposed within the o-ring groove.

11. The negative lead gas carrying pin of Claim 10, wherein the o-ring groove is recessed within a housing of the connector.

12. The negative lead gas carrying pin of Claim 12, wherein the housing is a plug housing connected to a torch lead of the plasma arc cutting apparatus.

13. The negative lead gas carrying pin of Claim 10, wherein the o-ring removal slot is approximately perpendicular to the o-ring groove.

14. The negative lead gas carrying pin of Claim 10, wherein the o-ring removal slot extends between the distal end of the negative lead gas carrying pin and the o-ring groove.

15. The negative lead gas carrying pin of Claim 10, wherein the o-ring removal slot further comprises chamfered edges.

16. The negative lead gas carrying pin of Claim 10 further comprising a plurality of o-ring removal slots.

17. The negative lead gas carrying pin of Claim 10, wherein the negative lead gas carrying pin comprises a brass material.

18. A sealing member comprising:

an o-ring groove disposed within the sealing member; and

an o-ring removal slot adjoining the o-ring groove,

wherein the o-ring removal slot provides access for removal of an o-ring disposed within the o-ring groove.

19. The sealing member of Claim 18 further defining a cylindrical portion disposed at a distal end of the sealing member, wherein the o-ring groove is disposed around the cylindrical portion proximate the distal end.

20. The sealing member of Claim 19, wherein the o-ring removal slot extends between the distal end of the sealing member and the o-ring groove.

21. The sealing member of Claim 18, wherein the o-ring removal slot further comprises chamfered edges.

22. The sealing member of Claim 18, wherein the o-ring groove is recessed within an adjacent sealing member.

23. The sealing member of Claim 18, wherein the o-ring groove is disposed around an outer surface of the sealing member.

24. The sealing member of Claim 18, wherein the o-ring groove is disposed around an inner surface of the sealing member.

25. The sealing member of Claim 18, wherein the o-ring removal slot is approximately perpendicular to the o-ring groove.

26. The sealing member of Claim 18 further comprising a plurality of o-ring removal slots.

27. A sealing member comprising:

an o-ring shoulder disposed within the sealing member; and

an o-ring removal slot adjoining the o-ring shoulder,

wherein the o-ring removal slot provides access for removal of an o-ring disposed against the o-ring shoulder.

28. The sealing member of Claim 27, wherein the o-ring removal slot is approximately perpendicular to the o-ring shoulder.

29. The sealing member of Claim 27, wherein the o-ring removal slot further comprises chamfered edges.

30. The sealing member of Claim 27, wherein the sealing member is a main power socket for use in a plasma arc cutting apparatus.

31. The sealing member of Claim 27 further comprising a plurality of o-ring removal slots.

32. A method of removing an o-ring from a sealing member, the method comprising the steps of:

(a) engaging an o-ring removal tool within an o-ring removal slot of the sealing member;

(b) advancing the o-ring removal tool along the o-ring removal slot; and

(c) engaging the o-ring removal tool with the o-ring to remove the o-ring via the o-ring removal slot,

wherein the o-ring removal slot provides improved access for removal of the o-ring.

33. The method of Claim 32, wherein the sealing member is a negative lead gas carrying pin for use in a plasma arc cutting apparatus.

34. The method of Claim 32, wherein the sealing member is a main power socket for use in a plasma arc cutting apparatus.

35. The method of Claim 32 further comprising the step of engaging at least one o-ring removal tool with a plurality of o-ring removal slots.